

(19) World Intellectual Property  
Organization  
International Bureau



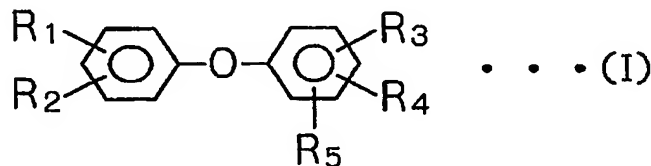
(43) International Publication Date  
6 January 2005 (06.01.2005)

PCT

(10) International Publication Number  
**WO 2005/001578 A2**

- (51) International Patent Classification<sup>7</sup>: **G03F 7/32**
- (21) International Application Number:  
PCT/JP2004/009077
- (22) International Filing Date: 22 June 2004 (22.06.2004)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:  
2003-184708 27 June 2003 (27.06.2003) JP
- (71) Applicant (for all designated States except US): **TOKYO OHKA KOGYO CO., LTD.** [JP/JP]; 150, Nakamaruko, Nakahara-ku, Kawasaki-shi, Kanagawa 211-0012 (JP).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): **WASHIO, Yasushi** [JP/JP]; c/o TOKYO OHKA KOGYO CO., LTD., 150, Nakamaruko, Nakahara-ku, Kawasaki-shi, Kanagawa 211-0012 (JP). **SAITO, Koji** [JP/JP]; c/o TOKYO OHKA KOGYO CO., LTD., 150, Nakamaruko, Nakahara-ku, Kawasaki-shi, Kanagawa 211-0012 (JP).
- (74) Agents: **TANAI, Sumio** et al.; 2-3-1, Yaesu, Chuo-ku, Tokyo 104-8453 (JP).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- Published:**  
— without international search report and to be republished upon receipt of that report
- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: DEVELOPER COMPOSITION FOR RESISTS AND METHOD FOR FORMATION OF RESIST PATTERN



of R<sub>1</sub> and R<sub>2</sub> represents an alkyl or alkoxy group having 5 to 18 carbon atoms and any reminder member represents a hydrogen atom, or an alkyl or alkoxy group having 5 to 18 carbon atoms, and at least one member of R<sub>3</sub>, R<sub>4</sub> and R<sub>5</sub> represents a group represented by the general formula (II), wherein M represents a metal atom, and any reminder member represents a hydrogen atom or a group represented by the general formula (II).

(57) Abstract: A developer composition for resists which has a high dissolution rate (high developing sensitivity). The developer composition for resists is a developer composition for resists, comprising an organic quaternary ammonium base as a main component and a surfactant, said surfactant containing an anionic surfactant represented by the following general formula (I), wherein at least one member

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
6 January 2005 (06.01.2005)

PCT

(10) International Publication Number  
**WO 2005/001578 A3**

(51) International Patent Classification<sup>7</sup>: **G03F 7/32**

(21) International Application Number:  
PCT/JP2004/009077

(22) International Filing Date: 22 June 2004 (22.06.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
2003-184708 27 June 2003 (27.06.2003) JP

(71) Applicant (for all designated States except US): **TOKYO OHKA KOGYO CO., LTD.** [JP/JP]; 150, Nakamaruko, Nakahara-ku, Kawasaki-shi, Kanagawa 211-0012 (JP).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **WASHIO, Yasushi** [JP/JP]; c/o TOKYO OHKA KOGYO CO., LTD., 150, Nakamaruko, Nakahara-ku, Kawasaki-shi, Kanagawa 211-0012 (JP). **SAITO, Koji** [JP/JP]; c/o TOKYO OHKA KOGYO CO., LTD., 150, Nakamaruko, Nakahara-ku, Kawasaki-shi, Kanagawa 211-0012 (JP).

(74) Agents: **TANAI, Sumlo et al.**; 2-3-1, Yaesu, Chuo-ku, Tokyo 104-8453 (JP).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

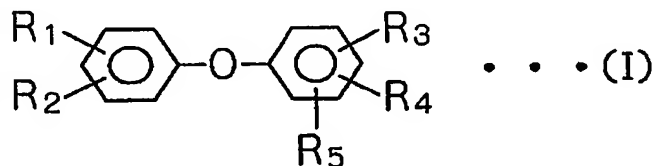
Published:

— with international search report

(88) Date of publication of the international search report:  
8 December 2005

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: DEVELOPER COMPOSITION FOR RESISTS AND METHOD FOR FORMATION OF RESIST PATTERN



of R<sub>1</sub> and R<sub>2</sub> represents an alkyl or alkoxy group having 5 to 18 carbon atoms and any reminder member represents a hydrogen atom, or an alkyl or alkoxy group having 5 to 18 carbon atoms, and at least one member of R<sub>3</sub>, R<sub>4</sub> and R<sub>5</sub> represents a group represented by the general formula (II), wherein M represents a metal atom, and any reminder member represents a hydrogen atom or a group represented by the general formula (II).

(57) Abstract: A developer composition for resists which has a high dissolution rate (high developing sensitivity). The developer composition for resists is a developer composition for resists, comprising an organic quaternary ammonium base as a main component and a surfactant, said surfactant containing an anionic surfactant represented by the following general formula (I), wherein at least one member